REMARKS

Claims 1and 8 have been amended to overcome the rejection under 35 U.S.C. § 102. Support for the amendment may be found in the original claims and on pages 9 and 26 of the specification.

Claims 8-14 have been amended as suggested by the examiner to overcome the rejections under 35 U.S.C. §§ 101 and 102 and to correct informalities. Support for the amendment may be found in the original claims and on pages 9, 10, and 26 of the specification.

Claims 1-14 are pending in the application.

By way of this response, Applicant has made a diligent effort to place the claims in condition for allowance. However, should there remain any outstanding issues that require adverse action, it is respectfully requested that the examiner telephone Eric J. Whitesell at (858)350-9257 so that such issues may be resolved as expeditiously as possible.

Response to the rejection under 35 U.S.C. § 101

Claims 8-14 stand rejected under 35 U.S.C. § 101, allegedly as being directed to non-statutory subject matter. Claims 8-14 have been amended to overcome the rejection by reciting a computer readable storage medium tangibly embodying instructions for a computer that when executed by the computer implement a method for isolating sources of variance in parametric data. A computer readable storage medium tangibly embodying instructions for a computer to implement a method is generally deemed to be directed to statutory matter under the rules of patent examination. Further, the method receives physical measurements and identifies a physical mechanism isolated by an estimated independent component analysis model in a repeatable and predictable manner to produce a useful result.

Response to the rejection under 35 U.S.C. § 102

Claims 1 and 8 stand rejected under 35 U.S.C. § 102(b), allegedly as being anticipated by Wang, U.S. Patent No. 5,859,964 (*Wang*). Applicant respectfully traverses the

rejection as follows.

On page 4, the rejection alleges that *Wang* (C 01 L 55) discloses the claimed step of cleaning the data set of measurements. The rejection apparently bases the allegation on the presumption that analyzing data is equivalent to cleaning data. However, analyzing data to detect a fault condition as described in *Wang* (C 01 L 55) is not equivalent to cleaning data. As explained in the specification (P 9, L 25-28), the claimed data cleaning means omitting abnormal samples from the data set to avoid introducing error. Clearly, analyzing data to detect a fault condition does not necessarily include omitting abnormal samples from the data set to avoid introducing error. Because analyzing data to detect a fault condition does not necessarily include omitting abnormal samples from the data set to avoid introducing error, analyzing data is not equivalent to cleaning data as alleged by the rejection. Because analyzing data is not equivalent to cleaning data, the presumption that analyzing data in *Wang* (C 01 L 55) is equivalent to cleaning data as recited in Claims 1 and 8 is false. Because the presumption is false, the allegation that relies on the presumption is likewise false. Accordingly, *Wang* (C 01 L 55) does not disclose the claimed step of cleaning the data set of measurements as alleged by the rejection.

The rejection further alleges on page 4 that *Wang* (C 14 L 40) discloses the claimed step of generating a principal component analysis basis from the cleaned data set. Because *Wang* does not disclose the claimed step of cleaning the data set as explained above, *Wang* does not disclose the claimed step of generating a principal component analysis basis from the cleaned data set. Even if *Wang* did disclose cleaning the data set, *Wang* (C 14 L 40) only "contemplates" principal component analysis to build models to detect deviations in a current process from a normal (previous) process. Further, *Wang* does not disclose identifying a corresponding physical mechanism from the estimated independent component analysis model as recited in Claims 1 and 8.

The rejection further alleges on page 4 that *Wang* (C 14 L 13-14) discloses the claimed step of removing a component from the principal component analysis basis when the calculated percentages of variance indicate that the component is a minor component. The rejection apparently bases the allegation on the presumption that deriving a new set of variables

from transformations is equivalent to removing a minor component from the principal component analysis basis. However, deriving a new set of variables from transformations as described in *Wang* (C 14 L 14) does not require removing a minor component from the principal component analysis basis. Clearly, a new set of variables may be derived from transformations without removing a minor component from the principal component analysis basis. Because deriving a new set of variables from transformations does not necessarily include removing a minor component from the principal component analysis basis, deriving a new set of variables from transformations is not equivalent to removing a minor component from the principal component analysis basis as alleged by the rejection. Because deriving a new set of variables from transformations is not equivalent to removing a minor component from the principal component analysis basis, the presumption that deriving a new set of variables from transformations in *Wang* (C 14 L 14) is equivalent to removing a minor component from the principal component analysis basis as recited in Claims 1 and 8 is false. Because the presumption is false, the allegation that relies on that presumption is likewise false. Accordingly, *Wang* (C 14 L 14) does not disclose the claimed step of removing a minor component from the principal component analysis basis as alleged by the rejection.

      The rejection further alleges on page 4 that *Wang* (Abstract and C 14 L 13) discloses the claimed step of generating as output the estimated independent component analysis model excluding the minor component. The rejection apparently bases the allegation on the presumption that detecting faults inherently includes generating the estimated independent component analysis model excluding the minor component. However, detecting faults as described in *Wang* (Abstract and C 14 L 14) does not require generating the estimated independent component analysis model excluding the minor component. Clearly, faults may be detected from a new set of variables derived from transformations without removing a minor component from the principal component analysis basis. Because detecting faults from a new set of variables from transformations does not necessarily include removing a minor component from the principal component analysis basis, the presumption that generating the estimated independent component analysis model excluding the minor component as recited in Claims 1

and 8 is inherent in detecting faults from a new set of variables from transformations as disclosed in *Wang* (Abstract and C 14 L 14) is false. Because the presumption is false, the allegation that relies on that presumption is likewise false. Accordingly, *Wang* (Abstract and C 14 L 14) do not disclose the claimed step of generating the estimated independent component analysis model excluding the minor component to identify a physical mechanism corresponding to significant components of the estimated independent component analysis model as recited in Claims 1 and 8.

Response to the rejection under 35 U.S.C. § 103

      Claims 4-7 and 11-14 stand rejected under 35 U.S.C. § 103(a), allegedly as being obvious over *Wang* in view of Heavlin, U.S. Patent 6,389,366 (*Heavlin*). Applicant respectfully traverses the rejection for the reasons explained above and further as follows.

      Regarding Claims 4 and 11, the rejection alleges on page 6 that *Heavlin* (C 02 L 67) discloses the claimed rotation angles of the estimated independent component analysis model. However, the rotation angle in *Heavlin* (C 02 L 67 – C 03 L05) refers to physically rotating a wafer, which is clearly not equivalent to a rotation angle of an independent component analysis model. Because the rotation angle in *Heavlin* (C 02 L 67 – C 03 L05) refers to rotation of a wafer rather than to rotation of an independent component analysis model, the modification of *Wang* by *Heavlin* proposed by the rejection fails to arrive at the claimed invention. Because the modification of *Wang* by *Heavlin* proposed by the rejection fails to arrive at the claimed invention, the rejection of Claims 4-7 and 11-14 lacks sufficient support to substantiate a rejection under 35 U.S.C. § 103.

      The rejection of Claims 2, 3, 9, and 10 is traversed for the same reasons presented in defense of Claims 1 and 8.

      In view of the above, Applicant respectfully requests favorable examination and reconsideration of Claims 1-14.

No additional fee is believed due for this amendment.

Respectfully submitted,

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